

## Claims

WHAT IS CLAIMED IS:

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1. A computing system for obtaining run-time internal state data within an application program, the computing system comprising:
    - an init module for determining if the run-time internal state data is to be collected during the operation of the application program;
    - a performance code marker module for obtaining and storing the run-time internal state data for later retrieval; and
    - an uninit module for formatting and storing the obtained run-time internal state data into memory that permits retrieval after the termination of the application program;wherein
    - the init module is executed before any run-time internal state data is collected;
    - the performance code marker module is executed each time run-time internal state data is to be collected; and
    - the uninit module is executed after all run-time internal state data desired has been collected.
  2. The computing system according to claim 1, wherein the init module determines if run-time internal state data is to be collected.
  3. The computing system according to claim 2, wherein init module makes the determination that run-time internal state data is to be collected by checking for the existence of an identification key within a system registry;
    - the identification key uniquely identifies the processing modules to be used to collect, format, and store the run-time internal state data to be collected.

1           4.     The computing system according to claim 3, wherein the init module further  
2 makes the determination that run-time internal state data is to be collected by checking for the  
3 existence of processing modules identified by the identification key within the system registry.

1           5.     The computing system according to claim 2, wherein the performance code  
2 marker module collects run-time internal state data only if the init module has determined that the  
3 run-time internal state data is to be collected.

1           6.     The computing system according to claim 5, wherein the performance code  
2 marker module generates a performance data record containing the collected run-time internal  
3 state data each time the performance code marker module is executed.

1           7.     The computing system according to claim 6, wherein the performance code  
2 marker module stores the performance data records within a data memory block within the  
3 processing modules identified by an identification key within a system registry.

1           8.     The computing system according to claim 7, wherein the uninit module retrieves  
2 the performance data records from the data memory block for transfer to a mass storage device.

1           9.     The computing system according to claim 8, wherein run-time internal state data  
2 comprises benchmark timing data related to the time at which a code marker is reached during  
3 the execution of the application program.

1           10.    The computing system according to claim 9, run-time internal state data comprises  
2 memory usage data related state of the memory used by the application program during the  
3 execution of the application program.

1           11.     The computing system according to claim 9, run-time internal state data comprises  
2     system registry usage data related system registry keys used by the application program during  
3     the execution of the application program.

1           12.     The computing system according to claim 9, run-time internal state data comprises  
2     open file usage data related state of the files that are currently open during the execution of the  
3     application program.

1           13.     A method for obtaining run-time internal state data within an application program,  
2     the method comprising:

3                 inserting one or more code markers into the application program at locations within the  
4     application program corresponding to the point at which run-time internal state data is desired;

5                 determining if run-time internal state data is to be collected at each code marker by  
6     checking for the existence of processing modules identified by an identification key within a  
7     system registry;

8                 if run-time internal state data is to be collected at each code marker:

9                         generates a performance data record containing the collected run-time internal  
10     state data each time the code markers are reached;

11                        storing the performance data records within a data memory block within the  
12     processing modules identified by the identification key within the system registry;

13                        retrieving the performance data records from the data memory block for transfer to  
14     a mass storage device once all of the run-time internal state data has been collected.

1           14.     The method according to claim 13, wherein run-time internal state data comprises  
2     benchmark timing data related to the time at which a code marker is reached during the execution  
3     of the application program.

1           15.     The computing system according to claim 13, run-time internal state data  
2 comprises memory usage data related state of the memory used by the application program  
3 during the execution of the application program.

1           16.     The computing system according to claim 13, run-time internal state data  
2 comprises system registry usage data related system registry keys used by the application  
3 program during the execution of the application program.

1           17.     The computing system according to claim 13, run-time internal state data  
2 comprises open file usage data related state of the files that are currently open during the  
3 execution of the application program.

1           18.     A computer data product readable by a computing system and encoding a  
2 computer program of instructions for executing a computer process for obtaining run-time  
3 internal state data within an application program, said computer process comprising the steps of:  
4           inserting one or more code markers into the application program at locations within the  
5 application program corresponding to the point at which run-time internal state data is desired;  
6           determining if run-time internal state data is to be collected at each code marker;  
7           if run-time internal state data is to be collected at each code marker:  
8                 generates a performance data record containing the collected run-time internal  
9 state data each time the code markers are reached;  
10            storing the performance data records within a data memory block;  
11            retrieving the performance data records from the data memory block for transfer to  
12 a mass storage device once all of the run-time internal state data has been collected.

1           19.     The computer data product according to claim 18, wherein the determining step  
2 makes the determination that run-time internal state data is to be collected by checking for the  
3 existence of an identification key within a system registry;

4           the identification key uniquely identifies the processing modules to be used to collect,  
5 format, and store the run-time internal state data to be collected.

1           20.     The computer data product according to claim 19, wherein the determining step  
2 further makes the determination that run-time internal state data is to be collected by checking for  
3 the existence of processing modules identified by the identification key within the system  
4 registry.

1           21.     The computer data product according to claim 19, wherein the data memory block  
2 is within the processing modules identified by the identification key within the system registry.

1           22.     The computer data product according to claim 19 wherein run-time internal state  
2 data comprises benchmark timing data related to the time at which a code marker is reached  
3 during the execution of the application program.

1           23.     The computer data product according to claim 19, run-time internal state data  
2 comprises memory usage data related state of the memory used by the application program  
3 during the execution of the application program.

1           24.     The computer data product according to claim 19, run-time internal state data  
2 comprises system registry usage data related system registry keys used by the application  
3 program during the execution of the application program.

1 25. The computer data product according to claim 19, run-time internal state data comprises  
2 open file usage data related state of the files that are currently open during the execution of the  
3 application program.

1 26. The computer data product according to claim 19, wherein the computer data product  
2 comprises a computer readable storage medium readable by a computer upon which encoded  
3 instructions used to implement the computer process are stored.

1 27. The computer data product according to claim 19, wherein the computer data product  
2 comprises a propagated signal on a carrier detectable by a computing system and encoding a  
3 computer program of instructions for executing the computer process.

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